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(71) Applicant(s)

Gary Hawkes

Flat 2, 9 Milton Avenue, Highgate, LONDON, N6,
United Kingdom

Andrew Lester

Flat 2, 9 Milton Avenue, Highgate, LONDON, N6,
United Kingdom

(72) Inventor(s)

Gary Hawkes

Andrew Lester

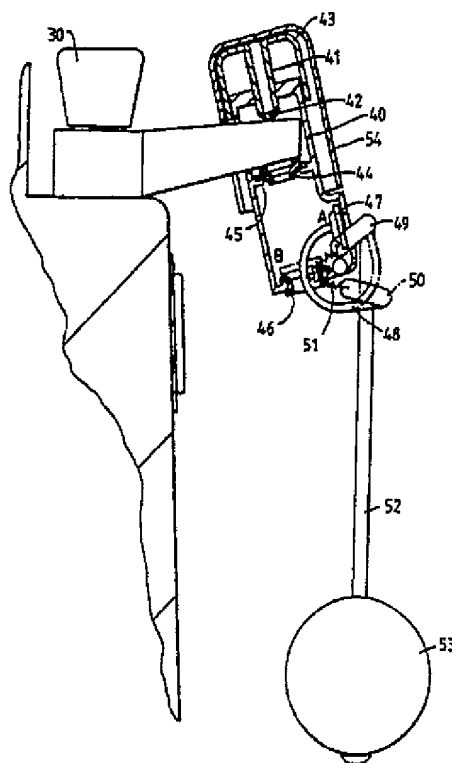
(74) Agent and/or Address for Service

Williams, Powell & Associates

34 Tavistock Street, LONDON, WC2E 7PB,
United Kingdom

(54) Valved outlet

(57) Means for switching off a bath tap (20) when the water reaches a predetermined level comprise a float (8; 17) mounted on a pivoted arm (6; 16). As the float rises a closure member (5; 18) on the arm blocks the outlet from the tap.



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- 1 444 260 (21) Application No. 48918/73 (22) Filed 19 Oct. 1973 (19)
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(54) VALVE ASSEMBLY

(71) I, GEORGES LAFON, a Citizen of France, of 32 Quai Chaigneau, Bichon, 33 310 Lormont, France, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to a valve assembly having a device for controlling the closing of a closure member. The present invention has particular, but not exclusive application to valve assemblies fitted in fuel storage tanks.

Closing devices which are triggered by the float or floats fitted in a tank are known. These devices comprise a valve which is secured to a shaft controlled by the float. However, the closing is gradual and represents a serious drawback when the total capacity of the tank cannot be utilised when the need arises. In fact, with such devices it is necessary to provide a safety space between the beginning of the valve opening and the end of filling the tank.

Moreover, the above mentioned devices do not enable the supply hose connected thereto to be emptied when the valve is tightly closed so that such emptying has to be performed outside the tank. It should also be noted that when the valve is not tightly closed there is a tendency to empty the decanting hose into the tank which can result in the storage tank overflowing.

According to the present invention there is provided a valve assembly for a fluid receptacle, comprising a valve body having a closure member pivotally mounted therein, the closure member being movable between closed and open positions, a latching member for holding the closure member in its open position and a float to be disposed in the receptacle and having means thereon distinct from the latching member and being able to engage with the latter when the level of fluid in the receptacle has risen to a predetermined level to release the latching member and allow the closure member to close rapidly.

The latching member may be in the form

of a lever secured to another shaft mounted on the valve body of the lever having an indentation adapted to receive, in the open position of the closure member, a stud operably connected to the shaft of the closure member. Conveniently the stud is mounted on a lever secured to the shaft of the closure member.

An embodiment of the present invention will now be described, by way of example, with reference to the accompanying drawings in which:

Figure 1 is an elevational view in cross-section of the device,

Figure 2 is a part sectional plan view on the line A—A of Figure 3, and

Figure 3 is an elevational view of the device.

The device shown in Figures 1 to 3 comprises a hollow body 1 secured to a support 2 of a valve seat 3 by any suitable means such as nuts and bolts 4.

At one side of the body 1 there is placed a pivot shaft 5 on which is secured a sleeve 6 integral with a valve 7 comprising a closure member in the form of a valve plate 8 and a support arm 9, the latter being secured for example by soldering, brazing or welding, to the plate 8. To one end of the shaft 5 there is mounted the end of a lever 10 having at its other end a counter-weight 11 while to the other end of the shaft 5 there is mounted a lever 12 provided at its free end 12a with a stud 13 capable of engaging in a notch 14 formed in one end of a lever 15 which forms the latching member and the other end of which is secured to a shaft 16 integral with the support 2 of the seat (Figs. 2 and 3).

On a shaft 17 located on the body 1 there is mounted a float 18 the lever of which has two arms 19 and 20 which are spread apart so as to substantially form a V. On the arm 19 there is provided a support piece 21 for a stud 22 secured perpendicularly to the plane of Figure 3 on the support piece 21. A stud 23 is fixed in the same manner to the end of the arm 20. In the position shown in Figures 2 and 3, the stud 23 bears against the upper side of the lever 12 and thereby maintains the valve 7

open. A threaded rod 24 is connected to the arm 19 and serves as guide means for the float proper 25 adapted to be positioned as desired and fixed on the rod 24 by nuts 27 or other tightening means.

The device, which is housed in a tank (not shown) operates in the following manner.

When the fluid in the tank (not shown), reaches the maximum predetermined level, excluding the volume of the filling hose, the float 18 entrained by the fluid rising interiorly of the tank pivots about the shaft 17 until the stud 22 abuts against the latching member 15. Simultaneously the arm 20 is pivoting upwards and the stud 23 moves out of contact with the lever 12. As the fluid level continues to rise in the tank, the stud 22 causes the latching member 15 to pivot anticlockwise (Figure 3) until the stud 13 is released from the notch 14 whereby the lever 12 pivots anticlockwise (Figure 3) freeing the valve 7.

The valve plate 8 is pushed into the stream of fluid of the filling hose whereby instantaneous closing creating a shock wave is ensured, the shock wave being capable of travelling along the filling hose.

Thereafter, that is when the tank is filled to the predetermined level, the valve is partly opened by the counter-weight 11 so as to permit emptying of the filling hose and ensure overflow safety.

In order to improve the reliability of emptying the filling hose, the valve plate 8 is provided with a decompression orifice 26, (Figure 1 and 2) offset with respect to the centre of the valve plate 8, which permits the fluid in the hose to reach the tank thereby ensuring the emptying of the filling hose.

It should also be noted that if the level in the tank goes beyond the predetermined level, that is when the valve having closed instantaneously is partly opened, any further flow of fluid received above the valve results in instantaneous closing of the valve.

Reference is made to my copending Application No. 48917/73 (Serial No. 1,444,259) which describes and claims a device for controlling the gate of a fluid supply reservoir in response to a build up of pressure in the fluid supply line.

WHAT I CLAIM IS:—

1. A valve assembly for a fluid receptacle, comprising a valve body having a closure member pivotally mounted therein, the closure member being movable between

closed and open positions, a latching member for holding the closure member in its open position and a float to be disposed in the receptacle and having means thereon distinct from the latching member and being able to engage with the latter when the level of fluid in the receptacle has risen to a predetermined level to release the latching member and allow the closure member to close rapidly.

2. A valve assembly according to claim 1, wherein the means for engagement with the latching member, comprises an abutment member carried by the float.

3. A valve assembly according to claim 1 or 2, wherein the closure member is secured to a shaft and the latching member is adapted to lock the shaft to hold the closure member open.

4. A valve assembly according to claim 1, 2 or 3, wherein the latching member comprises a lever secured to another shaft mounted on the valve body, the lever comprises an indentation adapted to receive in the open position of the closure member, a stud operably connected to the first mentioned shaft.

5. A valve assembly according to claim 4, wherein the stud is mounted on a lever secured to the shaft of the closure member.

6. A valve assembly according to any one of claims 1 to 5, wherein a venting orifice is provided in the closure member.

7. A valve assembly according to any one of claims 1 to 6, wherein a counter-weight is mounted on the shaft of the closure member.

8. A valve assembly according to any one of claims 1 to 7, wherein a body of the float is adjustable in position on a threaded rod to suit a predetermined fluid level in the receptacle for moving the closure member to its closed position.

9. A valve assembly for a fluid containing receptacle, constructed and arranged to operate substantially as hereinbefore described with reference to the accompanying drawing.

10. A fluid containing receptacle having a conduit for the filling of the receptacle and a valve assembly according to any one of claims 1 to 9 disposed in the conduit.

J. A. KEMP & CO.,
Chartered Patent Agents,
14, South Square,
Gray's Inn,
London, W.C.1.

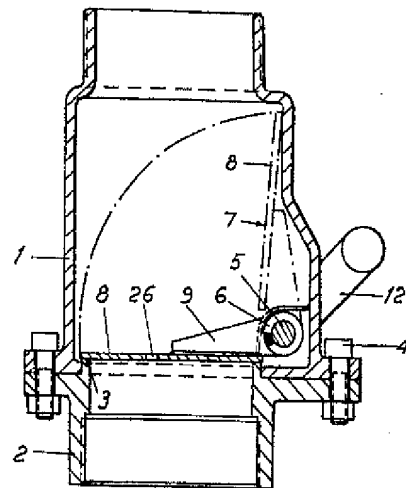


Fig. 1

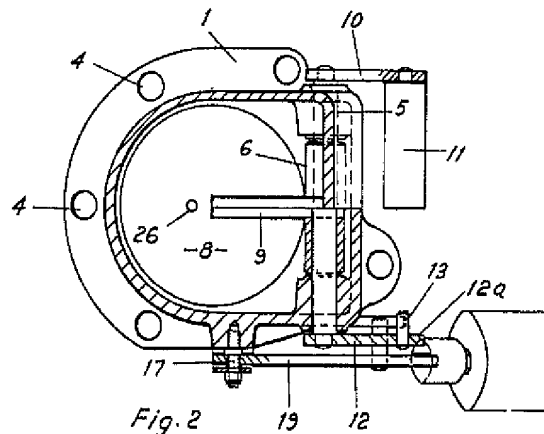


Fig. 2

